CLAIMS

1. A method for the detection of ryanodine receptor antibodies in patient serum samples, said antibodies being associated with the disease myasthenia gravis, said method comprising the following steps:

(a) obtaining a serum sample from a patient suspected of having myasthenia gravis or being at risk for the development of said disease;

(b) contacting said serum sample with a composition of fusion proteins comprising the following sequences: SEQ ID NO 1 or SEQ ID NO 2;

c) detecting fusion protein-antibody complex formation, wherein said detected complexes indicate the presence of ryanodine receptor antibodies.

2. The use of the fusion proteins comprising the following sequences: SEQ ID NO 1 or SEQ ID NO 2 for the detection of RyR antibodies.

3. A diagnostic kit for the detection of ryanodine receptor autoantibodies in patient serum samples, said autoantibodies being associated with the disease myasthenia gravis, said kit comprising fusion proteins having the following sequences: SEQ ID NO 1 or SEQ ID NO 2.

4. The diagnostic kit of claim 3, wherein the immunodetection reagent is a radiolabelled reagent.

5. The diagnostic kit of claim 3, wherein the presence of pc2 or pc25 fusion protein antibodies is indicative of a the presence of a thymoma

6. A composition of fusion proteins useful for the detection of ryanodine receptor antibodies, which are associated with the disease myasthenia gravis, said proteins being selected from the group of proteins having of a sequence SEQ ID NO 1 or SEQ ID NO 2, or a combination of said sequences.

7. A method for the manufacture of a pharmaceutical agent for the prevention and/or treatment of the disease myasthenia gravis, wherein said agent is administered to a patient in need thereof, in a amount sufficient to inhibit the binding of ryanodine receptor antibodies to the ryanodine receptor, said composition comprising a panel of fusion proteins having sequences SEQ ID NO 1 and/or SEQ ID NO 2.

8. A method of myasthenia gravis prognosis which involves the determination of the presence of RyR antibodies wherein the RyR antibodies are identified by the use of the fusion proteins pc2 and pc25.